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USSN 10/706,846  
Filed: November 12, 2003

### Remarks

This Amendment is submitted in response to the outstanding Office Action wherein the Examiner rejected Claims 1-14, all the claims under consideration. Reconsideration and allowance of the application in view of the amendments submitted herewith and the following remarks is respectfully requested.

Prior to discussing the prior art rejections, Applicants take this opportunity to set forth the following brief remarks about their invention. Applicants have discovered a method of providing improved control of quench rate when producing a heat treatable metal product by removing material from the product to achieve a shape near-net to a desired final shape; solution heat treating and quenching the product; and then stretching the product to achieve the desired final shape and aging. Conventionally, solution heat treatments are performed on a product prior to machining, in which the additional material disadvantageously effects quench process steps resulting in reduced strength. By machining the product to remove the excess material prior to solution heat treat, Applicants' minimize the product's thickness during quenching. The reduced thickness resulting from the machining steps prior to solution heat treat increases quench control by reducing the overall material for heat extraction. Following solution heat treat, Applicants stretch the product in order to achieve its final dimensions and to relieve strength. Prior to this invention, those in the art machined the products following solution heat treat in order to provide the final orientation of the product. Accordingly, it is respectfully submitted that the method, as now claimed, clearly describes the benefits obtained, which are not shown or suggested in the prior art. Thus, Applicants respectfully submit that the application is in condition for immediate allowance.

Turning now to the Office Action, Claims 1-8, and 12-14 stand rejected, under 35 U.S.C. §102(c), as being allegedly anticipated by U.S. Patent Application Publication No. 2005/0182483 to Heymes et al. ("Heymes et al."). Claims 1-8, and 12-14 stand rejected, under 35 U.S.C. §103(a), as allegedly being unpatentable over U.S. Patent No. 5,221,377 to Hunt, Jr. et al. ("Hunt, Jr. et al.") in view of the publication ASM: Vol. 4 Heat Treating pg. 854 ("ASM"). Applicants respectfully traverse for the following reasons.

Turning first to the rejections under §102, Applicants assert that Heymes et al. is not prior art, under 35 U.S.C. §102, since Applicants' invention was completed in this country prior to the

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priority date of the Heymes et al. application. To evidence Applicants' invention prior to Heymes et al. an affidavit under 37 C.F.R. §1.131, signed by Jeffrey J. Witters, a co-inventor of the invention of the present application, is concurrently submitted with this response, in which it is established that the present invention was invented by Alcoa personnel prior to the February 13, 2003 priority date of Heymes et al.

In a 131 affidavit, the applicants must set forth facts showing completion of the invention in this country prior to the date of the reference. See *In re Purdue Pharma L.P. v. Boehringer Ingelheim GmbH*, 98 F.Supp2d 362, 55 USPQ2d 1168 (S.D.N.Y. 2000). When alleged that conception or reduction to practice occurred prior to the effective date of the reference, the dates in the oath or declaration may be the actual dates or if the applicant does not desire to disclose his or her actual date, he or she may merely allege that the acts referred to occurred prior to a specified date. See *Ex parte Gasser*, 1880 C.D. 94 (Comm'r Pat 1880) see also MPEP 715.07. The 37 C.F.R. §1.131 affidavit or declaration must establish possession of the invention or something falling within the claim, in the sense that the claim as a whole reads on the content of affidavit. *In re Tanczyn*, 347 F.2d 830, 146 USPQ 298 (CCPA 1965). Finally, the PTO requires that the required facts be shown by evidence in the form of exhibits accompanying the affidavit or declaration. See MPEP 715.07.

Applicants respectfully submit that the evidence submitted with the 1.131 Affidavit demonstrates reduction to practice of Appellants' claimed invention in this country prior to the effective date of the Heymes et al. reference. In the Advisory Action dated January 10, 2006, it was the Examiner's position that the declaration filed on December 22, 2005 was insufficient to overcome the rejection citing Heymes et al., because evidence to support the 37 CFR 1.131(b) was allegedly not provided.

In addition to the attached affidavit, Applicants provide a copy of a proposal to the Puget Sound Wing Group at Boeing Aircraft Corporation including a rough order of the magnitude quotation for a machined panel, which was identified as confidential information. One line of the proposal states, "Plate produced in F-temper prior to machining. Machined panel brought to DVPT for SHT+QW+STR+AGE to 7651". DVPT refers to the ALCOA plant at Davenport, Ohio. SHT means to solution heat treat. Q denotes quenching. STR denotes a stretch process step. AGE refers to artificial aging. T7651 is a specified temper. Therefore, the proposal

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provides evidence of machining prior to SHT, reading directly on the claims of the present invention.

Clearly, the information provided by the attached 131 Declaration indicates that the present invention was completed by the present applicant in the United States prior to the effective priority date of the applied reference. Consequently, Heymes et al. is antedated and can not be used as a reference against the claims pending in this application. Therefore, in view of the foregoing, the '102(e) rejection citing Heymes et al. has been obviated, and withdrawal thereof is respectfully requested.

Regarding the rejection of Claims 1-8, and 12-14 under §103, Applicants submit that the applied prior art fails to render Applicants' invention obvious, since the applied prior art fails to teach or suggest each and every limitations of Applicants' claimed method. "To establish a prima facie case of obviousness of a claimed invention all the claimed limitations must be taught or suggested by the prior art". *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 44, 496 (CCPA 1970). Specifically, the applied prior art fails to teach or suggest producing a heat treatable metal product including the steps of providing an ingot of a heat treatable metal alloy; rolling the ingot to a flat product; removing material from the product to achieve a shape near-net to a desired final shape; solution heat treating and quenching the product; stretching the product to achieve the desired final shape; and aging the product.

Hunt, Jr., et al. discloses an alloy composition providing a combination of strength, density, toughness and corrosion resistance, wherein the products of the alloy may be solution heat treated. It is the Examiner's position that Hunt, et al. disclose that a product may be worked, machined and then solution heat treated, since the reference discloses in column 5, lines 55-60, that:

"Once an ingot has been cast from this composition, it is homogenized by heating to one or more temperatures between about 860° and 920°F, after which it is worked (and sometimes machined) into a desired shape. The product, if desired, should then be solution heat treated by heating to one or more temperatures between about 840° or 850°F and about 880° or 900°F to take substantial portions, preferably all or substantially all, of the soluble zinc, magnesium and copper into solution, it being again

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understood that with physical processes which are not always perfect, probably every last vestige of these main alloying ingredients will not be dissolved during SHT (solutionizing)."

Applicants respectfully disagree and submit the following:

Applicants' method of producing a heat treated product includes the steps of removing material from the product to achieve a shape near-net to a desired final shape; solution heat treating and quenching the product; stretching the product to achieve the desired final shape; and aging the product. The disclosure that the product may be machined does not teach or suggest the limitation that material be removed from the product to achieve a shape near-net to a desired final shape, as required by Applicants' claims. Referring to paragraph 0015 of Applicants' disclosure, the phrase "near net-shape" is defined as meaning the product is dimensionally similar to the dimensions of the final desired shape.

The portion of Hunt Jr., et al. cited by the Examiner only suggests that machining processes may be used following hot rolling. In the proper context, this merely suggests machining processes such as edge trimming to remove tight edges and cracking, which do not include machining the product to dimensions desired of the final shape. There is no motivation for one having skill in the art to read this portion and modify the disclosure of Hunt Jr. et al. to provide a method of providing a heat treated product including the steps of removing material from the product to achieve a shape near-net to a desired final shape; solution heat treating and quenching the product; stretching the product to achieve the desired final shape; and aging the product, as recited in Claims 1, 12 and 13. Therefore, Hunt Jr., et al. fail to render Applicants' invention obvious, since Hunt Jr., et al. fail to teach or suggest a method of providing a heat treated product that includes the step of removing material from the product to achieve a shape near-net to a desired final shape prior to solution heat treatment, wherein the shape near-net is dimensionally similar to the dimensions of the final desired shape.

The ASM also fails to fulfill the deficiencies of Hunt Jr., et al., since the ASM also fails to teach or suggest a method of providing a heat treated product that includes the step of removing material from the product to achieve a shape near-net to a desired final shape prior to solution heat treatment, wherein the shape near-net is dimensionally similar to the dimensions of

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the final desired shape, as required of Claims 1, 12 and 13. Referring to Page 4, it is the Examiner's position that the ASM teaches that it would be obvious for one having skill in the art to perform a machining step prior to solution heat treating in order to minimize residual stresses and reduce cooling rate differentials. Applicants respectfully disagree and submit the following.

First, Applicants note that there is no disclosure of solution heat treating throughout the referenced section of the ASM. It is also important to appreciate that although the ASM notes that residual stresses may be limited by machining prior to heat treatment, in the very next paragraph of this reference it is stated that quenching warpage precludes the usage of such operations. Therefore, one having skill in the art would not use this machining operation in combination with high temperature solution heat treatments and quenching, since warpage would most likely result in non-serviceable parts. If a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no motivation to make the proposed modification. *In re Gordan*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)

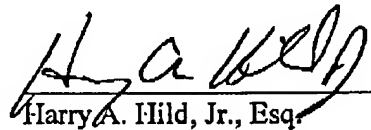
The §103 rejection also fails because there is no motivation in the prior art references themselves which suggests modifying the disclosed structures to arrive at the Applicant's claimed method for producing a heat treated product, as recited in amended Claims 1, 12 and 13. The law requires that the prior art reference provide some teaching, suggestion or motivation to make the modification. Here, there is no motivation provided in the disclosures of the applied references to provide Applicants' claimed method. "The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification." *In re Fitch*, 972 F.2d 1260, 1266 23 U.S.P.Q. F.2d 1780, 1783-84 (Fed. Cir. 1992).

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Accordingly, the Examiner is respectfully requested to reconsider the application, withdraw the rejections and issue an immediate a favorable action thereon. If upon review of the application, the Examiner is unable issue an immediate Notice of Allowance, the Examiner is respectfully requested to telephone the undersigned attorney with a view towards resolving any outstanding issues.

An early and favorable action is earnestly solicited.

Respectfully submitted,



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